PROG4

```
CREATE TABLE STUDENT(
USN VARCHAR(10) PRIMARY KEY,
SNAME VARCHAR(20),
ADDRESS VARCHAR(50),
PHONE VARCHAR(15),
GENDER CHAR);


CREATE TABLE SEMSEC(
SSID VARCHAR(8) PRIMARY KEY,
SEM INT,
SEC CHAR);


CREATE TABLE CLASS(
USN VARCHAR(10),
SSID VARCHAR(8),
FOREIGN KEY (USN) REFERENCES STUDENT(USN) ON DELETE CASCADE,
FOREIGN KEY (SSID) REFERENCES SEMSEC(SSID) ON DELETE CASCADE,
PRIMARY KEY(USN,SSID));

CREATE TABLE SUBJECT(
SUBCODE VARCHAR(20) PRIMARY KEY,
TITLE VARCHAR(20),
SEM INT,
CREDITS INT);

CREATE TABLE IAMARKS(
USN VARCHAR(10),
SUBCODE VARCHAR(20),
SSID VARCHAR(8),
TEST1 INT,
TEST2 INT,
TEST3 INT,
FINALIA DECIMAL(5,2),
FOREIGN KEY (USN) REFERENCES STUDENT(USN) ON DELETE CASCADE,
FOREIGN KEY (SUBCODE) REFERENCES SUBJECT(SUBCODE) ON DELETE CASCADE,
FOREIGN KEY (SSID) REFERENCES SEMSEC(SSID) ON DELETE CASCADE,
PRIMARY KEY (USN,SUBCODE,SSID));

INSERT INTO STUDENT VALUES ('1RN13CS020','AKSHAY','BELAGAVI',
8877881122,'M');
INSERT INTO STUDENT VALUES('1RN13CS062','SANDHYA','BENGALURU',
7722829912,'F');
INSERT INTO STUDENT VALUES('1RN13CS091','TEESHA','BENGALURU',
7712312312,'F');
INSERT INTO STUDENT VALUES('1RN13CS066','SUPRIYA','MANGALURU',
8877881122,'F');
INSERT INTO STUDENT VALUES('1RN14CS010','ABHAY','BENGALURU',
9900211201,'M');
INSERT INTO STUDENT VALUES('1RN14CS032','BHASKAR','BENGALURU',
9923211099,'M');
INSERT INTO STUDENT VALUES ('1RN14CS025','ASMI','BENGALURU', 7894737377,'F');
INSERT INTO STUDENT VALUES ('1RN15CS011','AJAY','TUMKUR', 9845091341,'M');
INSERT INTO STUDENT VALUES ('1RN15CS029','CHITRA','DAVANGERE',
7696772121,'F');
```

```
INSERT INTO STUDENT VALUES ('1RN15CS045','JEEVA','BELLARY', 9944850121,'M');
INSERT INTO STUDENT VALUES ('1RN15CS091','SANTOSH','MANGALURU',
8812332201,'M');
INSERT INTO STUDENT VALUES('1RN16CS045','ISMAIL','KALBURGI',
9900232201,'M');
INSERT INTO STUDENT VALUES ('1RN16CS088','SAMEERA','SHIMOGA',
9905542212,'F');
INSERT INTO STUDENT VALUES ('1RN16CS122','VINAYAKA','CHIKAMAGALUR',
8800880011,'M');

INSERT INTO SEMSEC VALUES ('CSE8A', 8, 'A');
INSERT INTO SEMSEC VALUES ('CSE8B', 8, 'B');
INSERT INTO SEMSEC VALUES ('CSE8C', 8, 'C');
INSERT INTO SEMSEC VALUES ('CSE7A', 7, 'A');
INSERT INTO SEMSEC VALUES ('CSE7B', 7, 'B');
INSERT INTO SEMSEC VALUES ('CSE7C', 7, 'C');
INSERT INTO SEMSEC VALUES ('CSE6A', 6, 'A');
INSERT INTO SEMSEC VALUES ('CSE6B', 6, 'B');
INSERT INTO SEMSEC VALUES ('CSE6C', 6, 'C');
INSERT INTO SEMSEC VALUES ('CSE5A', 5, 'A');
INSERT INTO SEMSEC VALUES ('CSE5B', 5, 'B');
INSERT INTO SEMSEC VALUES ('CSE5C', 5, 'C');
INSERT INTO SEMSEC VALUES ('CSE4A', 4, 'A');
INSERT INTO SEMSEC VALUES ('CSE4B', 4, 'B');
INSERT INTO SEMSEC VALUES ('CSE4C', 4, 'C');
INSERT INTO SEMSEC VALUES ('CSE3A', 3, 'A');
INSERT INTO SEMSEC VALUES ('CSE3B', 3, 'B');
INSERT INTO SEMSEC VALUES ('CSE3C', 3, 'C');
INSERT INTO SEMSEC VALUES ('CSE2A', 2, 'A');
INSERT INTO SEMSEC VALUES ('CSE2B', 2, 'B');
INSERT INTO SEMSEC VALUES ('CSE2C', 2, 'C');
INSERT INTO SEMSEC VALUES ('CSE1A', 1, 'A');
INSERT INTO SEMSEC VALUES ('CSE1B', 1, 'B');
INSERT INTO SEMSEC VALUES ('CSE1C', 1, 'C');

-- Fixing INSERT INTO CLASS statements
INSERT INTO CLASS VALUES ('1RN13CS020', 'CSE8A');
INSERT INTO CLASS VALUES ('1RN13CS062', 'CSE8A');
INSERT INTO CLASS VALUES ('1RN13CS066', 'CSE8B');
INSERT INTO CLASS VALUES ('1RN13CS091', 'CSE8C');
INSERT INTO CLASS VALUES ('1RN14CS010', 'CSE7A');
INSERT INTO CLASS VALUES ('1RN14CS025', 'CSE7A');
INSERT INTO CLASS VALUES ('1RN14CS032', 'CSE7A');
INSERT INTO CLASS VALUES ('1RN15CS011', 'CSE4A');
INSERT INTO CLASS VALUES ('1RN15CS029', 'CSE4A');
INSERT INTO CLASS VALUES ('1RN15CS045', 'CSE4B');
INSERT INTO CLASS VALUES ('1RN15CS091', 'CSE4C');
INSERT INTO CLASS VALUES ('1RN16CS045', 'CSE3A');
INSERT INTO CLASS VALUES ('1RN16CS088', 'CSE3B');
INSERT INTO CLASS VALUES ('1RN16CS122', 'CSE3C');

-- Fixing INSERT INTO SUBJECT statements
INSERT INTO SUBJECT VALUES ('10CS81', 'ACA', 8, 4);
INSERT INTO SUBJECT VALUES ('10CS82', 'SSM', 8, 4);
INSERT INTO SUBJECT VALUES ('10CS83', 'NM', 8, 4);
INSERT INTO SUBJECT VALUES ('10CS84', 'CC', 8, 4);
INSERT INTO SUBJECT VALUES ('10CS85', 'PW', 8, 4);
INSERT INTO SUBJECT VALUES ('10CS71', 'OOAD', 7, 4);
INSERT INTO SUBJECT VALUES ('10CS72', 'ECS', 7, 4);
INSERT INTO SUBJECT VALUES ('10CS73', 'PTW', 7, 4);
```

```
INSERT INTO SUBJECT VALUES ('10CS74', 'DWDM', 7, 4);
INSERT INTO SUBJECT VALUES ('10CS75', 'JAVA', 7, 4);
INSERT INTO SUBJECT VALUES ('10CS76', 'SAN', 7, 4);
INSERT INTO SUBJECT VALUES ('15CS51', 'ME', 5, 4);
INSERT INTO SUBJECT VALUES ('15CS52', 'CN', 5, 4);
INSERT INTO SUBJECT VALUES ('15CS53', 'DBMS', 5, 4);
INSERT INTO SUBJECT VALUES ('15CS54', 'ATC', 5, 4);
INSERT INTO SUBJECT VALUES ('15CS55', 'JAVA', 5, 3);
INSERT INTO SUBJECT VALUES ('15CS56', 'AI', 5, 3);

-- Fixing INSERT INTO SUBJECT statements
INSERT INTO SUBJECT VALUES ('15CS41', 'M4', 4, 4);
INSERT INTO SUBJECT VALUES ('15CS42', 'SE', 4, 4);
INSERT INTO SUBJECT VALUES ('15CS43', 'DAA', 4, 4);
INSERT INTO SUBJECT VALUES ('15CS44', 'MPMC', 4, 4);
INSERT INTO SUBJECT VALUES ('15CS45', 'OOC', 4, 3);
INSERT INTO SUBJECT VALUES ('15CS46', 'DC', 4, 3);
INSERT INTO SUBJECT VALUES ('15CS31', 'M3', 3, 4);
INSERT INTO SUBJECT VALUES ('15CS32', 'ADE', 3, 4);
INSERT INTO SUBJECT VALUES ('15CS33', 'DSA', 3, 4);
INSERT INTO SUBJECT VALUES ('15CS34', 'CO', 3, 4);
INSERT INTO SUBJECT VALUES ('15CS35', 'USP', 3, 3);
INSERT INTO SUBJECT VALUES ('15CS36', 'DMS', 3, 3);

-- Fixing INSERT INTO IAMARKS statements
INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3)
VALUES ('1RN13CS091', '10CS81', 'CSE8C', 15, 16, 18);

INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3)
VALUES ('1RN13CS091', '10CS82', 'CSE8C', 12, 19, 14);

INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3)
VALUES ('1RN13CS091', '10CS83', 'CSE8C', 19, 15, 20);

INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3)
VALUES ('1RN13CS091', '10CS84', 'CSE8C', 20, 16, 19);

INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3)
VALUES ('1RN13CS091', '10CS85', 'CSE8C', 15, 15, 12);
```

Q1:

```
SELECT S.*, SS.SEM, SS.SEC
FROM STUDENT S, SEMSEC SS, CLASS C
WHERE S.USN = C.USN
AND SS.SSID = C.SSID
AND SS.SEM = 4
AND SS.SEC = 'C';
```

Q2:

```
SELECT SS.SEM, SS.SEC, S.GENDER, COUNT(S.GENDER) AS COUNT FROM
STUDENT S, SEMSEC SS, CLASS C
WHERE S.USN = C.USN AND
SS.SSID =C.SSID
GROUP BY SS.SEM, SS.SEC, S.GENDER
ORDER BY SEM;
```

Q3:

```
CREATE VIEW STU_TEST1_MARKS_VIEW AS
SELECT TEST1, SUBCODE
```

```
FROM IAMARKS
WHERE USN = '1RN13CS091';

Q4:
DROP PROCEDURE IF EXISTS AVGMARKS;

DELIMITER $$

CREATE PROCEDURE AVGMARKS()
BEGIN
    DECLARE C_USN VARCHAR(15);
    DECLARE C_SUBCODE VARCHAR(10);
    DECLARE C_A INT;
    DECLARE C_B INT;
    DECLARE C_C INT;
    DECLARE C_SM INT;
    DECLARE C_AV FLOAT;
    DECLARE done INT DEFAULT FALSE;

    -- Declare cursor to select marks and unique identifiers
    DECLARE C_IAMARKS CURSOR FOR
    SELECT USN, SUBCODE, TEST1, TEST2, TEST3
    FROM IAMARKS
    WHERE FINALIA IS NULL;

    -- Declare handler for the end of the cursor
    DECLARE CONTINUE HANDLER FOR NOT FOUND SET done = TRUE;

    OPEN C_IAMARKS;

    fetch_loop: LOOP
        FETCH C_IAMARKS INTO C_USN, C_SUBCODE, C_A, C_B, C_C;
        IF done THEN
            LEAVE fetch_loop;
        END IF;

        -- Calculate sum and average
        IF C_A != C_B THEN
            SET C_SM = C_A + C_B;
        ELSE
            SET C_SM = C_A + C_C;
        END IF;

        SET C_AV = C_SM / 2;

        -- Update FINALIA based on the calculated average using USN and SUBCODE
        UPDATE IAMARKS
        SET FINALIA = C_AV
        WHERE USN = C_USN AND SUBCODE = C_SUBCODE;
    END LOOP;

    CLOSE C_IAMARKS;
END $$

DELIMITER ;

SET SQL_SAFE_UPDATES = 0;


CALL AVGMARKS();
```

```
SELECT * FROM IAMARKS;

SET SQL_SAFE_UPDATES = 1;
```

Q5:

```
SELECT S.USN,S.SNAME,S.ADDRESS,S.PHONE,S.GENDER,
(CASE
WHEN IA.FINALIA BETWEEN 17 AND 20 THEN'OUTSTANDING' WHEN
IA.FINALIA BETWEEN 12 AND 16 THEN 'AVERAGE' ELSE 'WEAK'
END) AS CAT
FROM STUDENT S, SEMSEC SS, IAMARKS IA, SUBJECT SUB
WHERE S.USN = IA.USN AND
SS.SSID = IA.SSID AND
SUB.SUBCODE = IA.SUBCODE AND
SUB.SEM = 8;
```